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journal or publication title	Bulletin of the Toyama Science Museum
number	33
page range	27-31
year	2010-03-15
URL	http://repo.tsm.toyama.toyama.jp/?action=repository_uri&item_id=923

富山市科学博物館研究報告第33号, pp.27-31；(2010)

A New Species of the Genus *Mongoloniscus* (Crustacea: Isopoda) from Toyama Plain[*]

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富山平野で発見されたサトワラジムシの１種

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富山県中新川郡立山町泉の栃津川畔の土手から採取された等脚目の1種を新種、*Mongoloniscus arvus*（和名：ニイカワサトワラジムシ、新称）として記載した。本種は富山平野の水田地帯を流れる栃津川の土手の草むらや比較的大きな石の下から採集されたものである。本種は日本中央部の二次林や林縁、農耕地などに普通に見られるフイリワラジムシ *M. maculatus* と最も類似するが、(1) オスの第1腹肢内肢がまっすぐであること、(2) オス第1-3胸肢の長節側面に弓形の一列の小剛毛があること、(3) 胸部の剛毛が側縁から離れているものがあること、(4) オスの第2腹肢内肢が長いこと、(5) 胸脚に剛毛が多いこと、(6) 第3腹肢が短いことなどで区別できる。またホクリクワラジムシ *M.hokurikuensis* とは頭部の前側部が顕著に突出していることやオスの第1腹肢外肢に凹みがあることなどで区別される。本種のホロタイプは富山市科学博物館に保管され、パラタイプは富山市科学博物館のほか、国立科学博物館、大阪市立自然史博物館、北九州市立自然史・歴史博物館で保管される。

キーワード：等脚類、新種、富山、分類学、ニイカワサトワラジムシ
Key words：Isopod, Toyama *Mongoloniscus*

During the faunal survey of the Tochitzu-gawa River, I found some strange terrestrial isopod crustaceans, at the bank of the River, Izumi, Tateyama-machi, Toyama-ken, 23, July 2009. At the closer examinations of mine, it proved to represent a new species of the genus *Mongoloniscus*. The holotype will be deposited at Toyama Science Museum (TOYA Cr-19882).

Order Isopoda
Suborder Oniscidea
Family Agnaridae

Mongoloniscus arvus n.sp.

(Japanese name: Niikawa-sato-warajimushi, new)
(Figs 1－2)

Material examined: 2♂♂ (1♂ holotype, 6.1 mm in body length and 1♂ paratype, 7.0 mm in body length) and 8♀♀(1♀ allotype, 10.1 mm in body length and 7♀♀ paratypes, 7.8-9.1 mm in body length), Bank of Tochitzu-gawa River, Izumi, Tateyama-machi, Toyama-ken, 23, July 2009. coll. Noboru Nunomura. Type series is deposited as follows: holotype(TOYA Cr-19882), allotype (TOYA Cr-19883) and 4 paratypes (TOYA Cr-19884〜19887) at Toyama Science Museum, 2 paratypes, (OMNH Ar-7774〜7775) at Osaka Museum of Natural History, 2 paratypes (KMNH IvR 500,481〜500,482) at Kitakyushu Museum of Natural History and Human History.

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[*] Contributions from the Toyama Science Museum, No.380

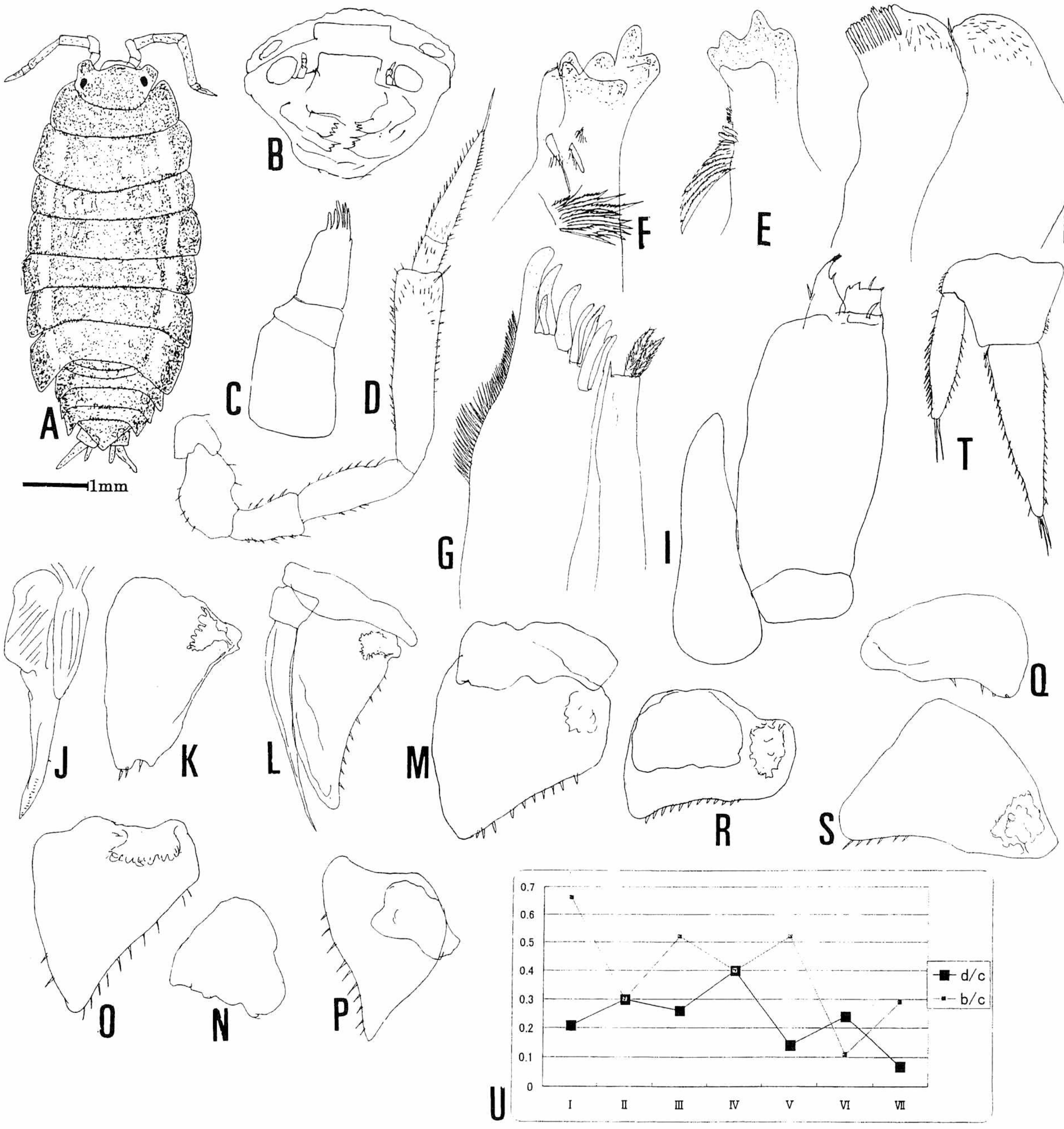

Fig. 1. ***Mongoloniscus arvus*** **n.sp.**

A, Dorsal view; B, Frontal view of cephalon; C, Antennule; D, Antenna; E, Right mandible; F, Left mandible; G, Maxillula; H, Maxilla; I, Maxilliped; J, Penes and endopod of male first pleopod; K, Exopod of the same; L, Male second pleopod; M, Pleopod 3 of male; N, Endopod of pleopod 4 of male; O, Exopod of the same; P, Pleopod 5 of male; Q, Endopod of female of pleopod 1; R, Exopod of the same; S, Pleopod 2 of female; U, Position of noduli lateralis (A-P and U, Male holotype; Q-S, Female paratype).

Description of male: Body 2.2 times as long as wide. Color black, with a pair of paler area near lateral border of pereonal somites 1-7 and many paler irregular patterns on dorsal surface. Body surface covered with large number of small granules. Noduli lateralis (Fig. 1U) on pereonal somites 2-4 relatively remote from the lateral margin.

Antennule (Fig. 1C): terminal segment with 6 aesthetascs. Antenna (Fig. 1D) reaching the boundary between pereonites 1 and 2, terminal flagellar segment 3.7 times longer than basal one.

Right mandible (Fig. 1E): pars incisiva 4-headed; lacinia mobilis not chitinized weakly 2-toothed; 2 penicils; processus molaris represented by a tuft of setae. Left mandible (Fig. 1F): pars incisiva 4-headed; lacinia mobilis 3-toothed; 2 penicils; processus molaris represented by a tuft of setae. Maxillula (Fig.1G): inner lobe with 2 plumose setae and a small but acute projection on distal outer margin; outer lobe with 10 simple teeth. Maxilla (Fig.1H): relatively slender; apically bilobed, the inner somewhat wider and bearing a field of densely spaced sensilla. Maxilliped (Fig. 1I): endite with 3 spurs and a seta on distal margin; palpal segment 1 with a strong tooth.

Pereopod 1 (Fig. 2A): basis 3.0 times as long as wide, with 15 short setae on inner margin and 7 short setae on outer margin; ischium 0.6 times as long as basis, with 8-9 setae on outer margin; merus 3/4 as long as ischium, with a series of short setae on lateral surface, 13-15 setae on inner margin and 2 setae at outer distal angle; carpus little longer than merus, with 24-26 setae including bifurcated or trifurcated ones on inner margin, and 3 longer setae and 11-12 projections on distal margin; propodus as long as carpus, with 2 longer and 9-10 shorter setae on inner margin and 8 short setae on outer margin.

Pereopod 2 (Fig. 2C): basis 3.6 times as long as wide, with 2 setae at inner distal angle; ischium 45% as long as basis, with 8-9 setae on inner margin and 3-4 setae on outer margin; merus a little shorter than merus, with a series of short setae on lateral surface, more than 22 setae including bifurcated ones on inner margin and a relatively long seta at outer distal angle; carpus 1.2 times longer than merus, with about 30 setae including bifurcated or trifurcated ones on inner margin, and more than 20 short setae on outer margin; propodus as long as carpus, with 4 relatively long setae on inner margin and 16-18 short setae on outer margin.

Pereopod 3 (Fig. 2D): basis 3.5 times as long as wide; ischium half the length of basis, with 8 setae on inner margin and 4 setae on distal margin; merus 3/4 as long as ischium, with 13 setae including some bifurcated ones on inner margin and a series of setae on lateral margin on lateral surface; carpus 1.5 times longer than merus, with many setae on inner margin and 5 stronger setae on distal margin; propodus a little shorter than carpus, with 6 setae on inner margin and 9-10 setae on outer margin.

Pereopod 4 (Fig. 2F): basis 2.8 times as longer as wide; ischium half the length of basis, with 4-5 setae on inner margin and 2 setae on distal margin; merus 75% as long as ischium, with 7-8 setae on inner margin and 2-3 setae on distal margin; carpus 1.3 times longer than merus, with 16-17 setae on inner margin and 3-4 setae on distal margin; propodus a little shorter than carpus, 5 setae on inner margin and 10 setae on outer margin.

Pereopod 5 (Fig. 2G): basis 3.2 times as long as wide, with 12-15 short setae on both margins; ischium half the length of basis, with 9-10 setae on inner margin and 4-5 setae on outer margin; merus 0.6 times as long as ischium, with 7-8 setae including trifurcated ones on inner margin and a seta on distal margin and 6 setae on outer margin; carpus 1.4 times longer than merus, with 6 longer and some shorter setae on inner margin 3 long setae on distal margin and 11-12 short setae on inner margin; propodus as long as carpus, with 8 longer and 4-5 shorter setae on inner margin and 10 short setae on outer margin.

Pereopod 6 (Fig. 2H): basis 3.5 times as long as wide, with 10 setae on inner margin; ischium 0.6 times as long as basis; merus 65% as long as ischium, with 10-12 setae including a bifurcated one on inner margin and 2 setae at outer distal angle; carpus 1.4 times longer than merus, with 15-16 setae including 2-3 long trifurcated ones; propodus as long as carpus, with 5 longer and 2-3 shorter setae on inner margin.

Pereopod 7 (Fig. 2I): basis 2.7 times as long as wide, with 6-8 setae on both margins; ischium 55% as long as basis, with 7-8 setae on both margins; merus 0.8 times as long as ischium, with more than 8 setae on inner margin and 5 setae on outer distal area; carpus a little longer than merus, with 13-15 setae on inner margin; propodus as long as carpus, with 6-8 setae and several very short setae on inner margin and more than 20 setae on outer margin.

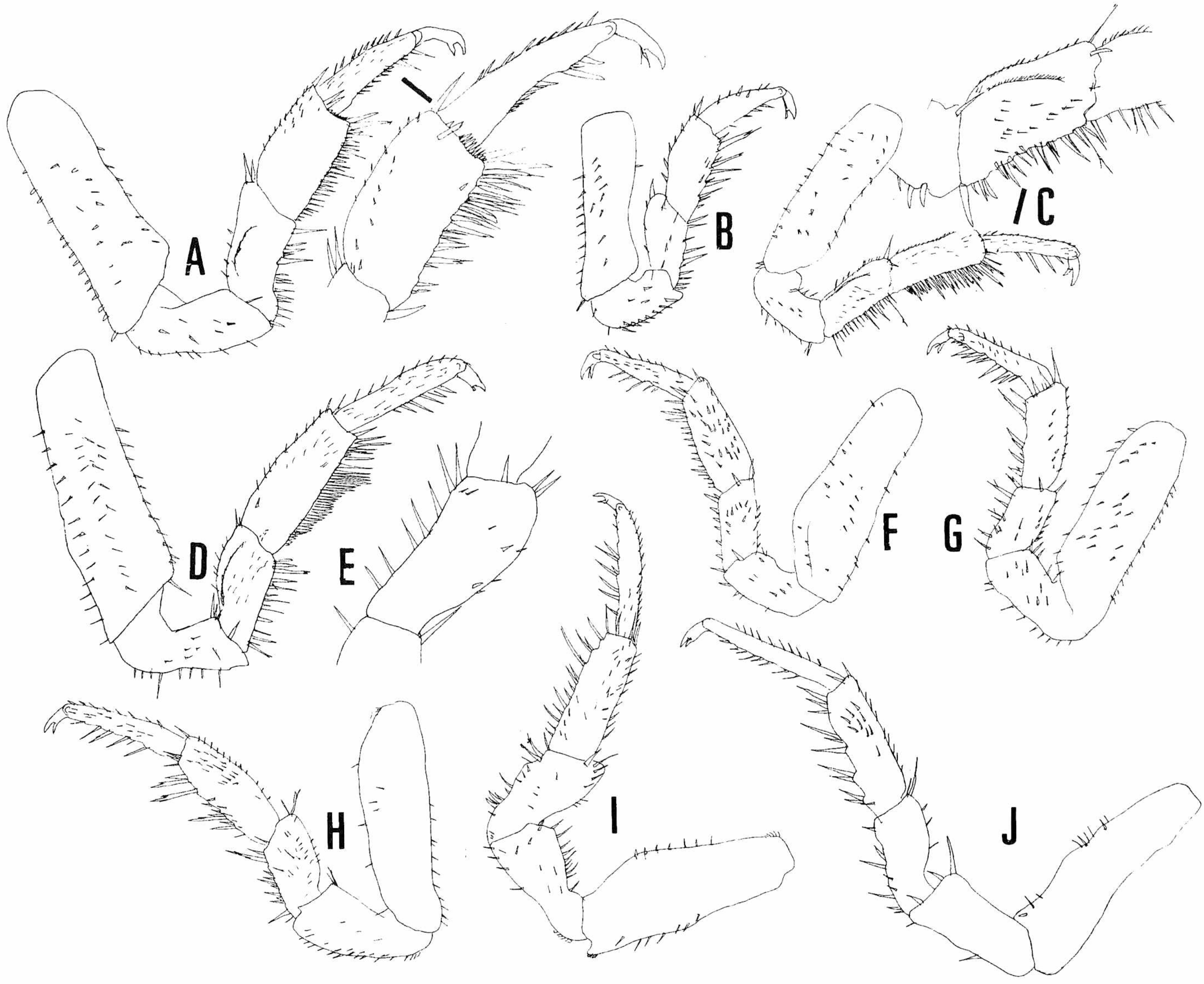

Fig. 2. *Mongoloniscus arvus* n.sp.

A, Male pereopod 1; B, Female pereopod 1; C, Male pereopod 2; D, Male pereopod 3; E, Merus of female pereopod 3; F-I, Male pereopods 4-7; J Female pereopod 7(A, C-D, F-I, Holotype; male B, E and J, Allotype female).

Penes (Fig. 1J) fusiform, apical rounded.

Pleopod1: endopod (Fig. 1J) straight with a series of more than 16 denticles on distal margin; exopod (Fig. 1 K) rectangular, apical area with a shallow concavity bearing 3 setae on distal margin.

Pleopod 2 (Fig. 1L): endopod straight; terminal margin slender, exopod triangular with 9 denticles on outer margin.

Pleopod 3 (Fig. 1M): endopod rectangular; exopod triangular, with 11 denticles on outer margin.

Pleopod 4: endopod (Fig. 1N) rectangular; exopod (Fig. 1O) triangular, with 10 setae on outer margin and 2 setae on inner margin.

Pleopod 5 (Fig. 1P) one size smaller than pleopod 4: endopod small and rectangular; exopod triangular, with 10 denticles on outer margin.

Uropod (Fig. 1T): basis rectangular, 0.7 times as long as wide; endopod twice longer than basis, with a tuft of setae at the tip; exopod0.75 times as long as, with a tuft of setae at the tip.

Female: Roughly similar to male, but the following feature different except sexual characters are distinguished.

Inner margin of merus, carpus and propodus of pereopod 1 (Fig. 2B) less setose than those of male.

Pereopods 1-3(Fig. 2B and E): without a series of short setae on merus as seen in male.

Pereopods 4-7 (Fig. 2J): roughly same to those of male, but less setose and less numerous in bifurcated setae.

Pleopod1 (Fig. 1Q and R): endopod lanceolate with 3 setae; exopod triangular, with 6 setae.

Pleopod 2(Fig. 1 S): exopod with 11-12 denticles on outer margin.

Pleopods 3-5 similar to those of male.

Etymology: "arvus" means "arable". The present new species dwells a slightly wet environment near the arable, rice field and bank of a stream.

Remarks: Hitherto, 10 species of the genus *Mongoloniscus* have been recorded as valid (Schmalfuss, H. 2003) and 8 species from Japan(Nunomura, 1987, 1991, 1992, 2000, 2003) The present species is most closely allied to *Mongoloniscus maculates*(Iwamoto, 1943) in the following features: (1) straight endopod of male first pleopod, (2) presence of a series of setae on lateral margin of merus of male pereopods 1-3, (3) remoter position of noduli lateralis on pereonal somite, (4)longer stylus of male second pleopod, (5) more setae on pereopods and (6) shorter exopod of pleopod 3.

The present species is almost separated from *M. hokurikuensis* (Nunomura, 1987) an endemic species to Hokuriku in the following features: (1) presence of concavity on exopod of male first pleopod, (2) protruded antero-lateral projection of cephalon, (3) near noduli lateralis on pereonal somites 2-4, (4) numerous setae on pereopod 7 and (5) more aesthetascs on antennule.

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